America's Natural Gas Market Challenge

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North American Gas Market

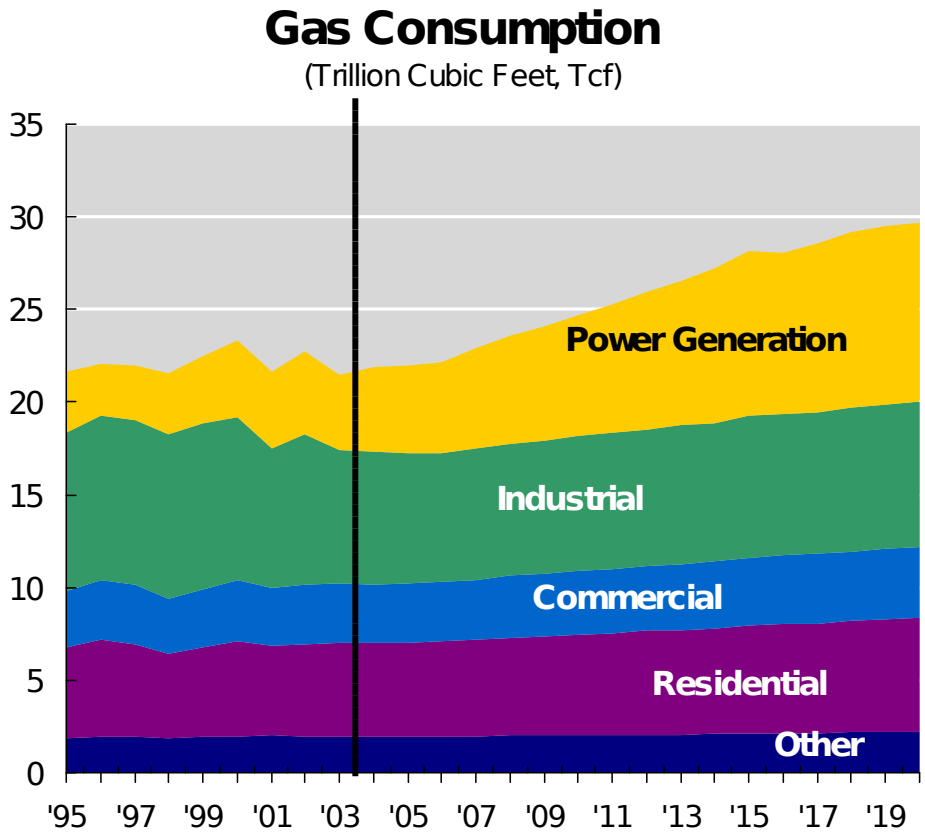
- North American supply/demand balance is and will remain tight.
- Gas consumption grows.
- “New frontier” gas supplies are necessary.
- Gas prices remain relatively high.
- High levels of gas price volatility continue.

Why are Natural Gas Prices so Volatile?

1. Inelastic structure of supply
2. Inelastic structure of demand
3. Regulatory lags
4. Market imperfection/manipulation
5. Technical/speculative trading

Gas Demand Outlook

- Power sector will grow substantially.
  - ✓ Over 200 GW's of new gas-based generating capacity.
- Modest growth in R/C.
- Industrial will fluctuate around current levels.
- Price-induced demand reductions may balance the market.



	Delta 2003-2010	Delta 2003-2020
Power Generation	+2.4 Tcf	+5.5 Tcf
Industrial	+0.1 Tcf	+0.7 Tcf
Commercial	+0.2 Tcf	+0.7 Tcf
Residential	+0.4 Tcf	+1.1 Tcf
Other	+0.1 Tcf	+0.2 Tcf

Source: Energy and Environmental Analysis (EEA)

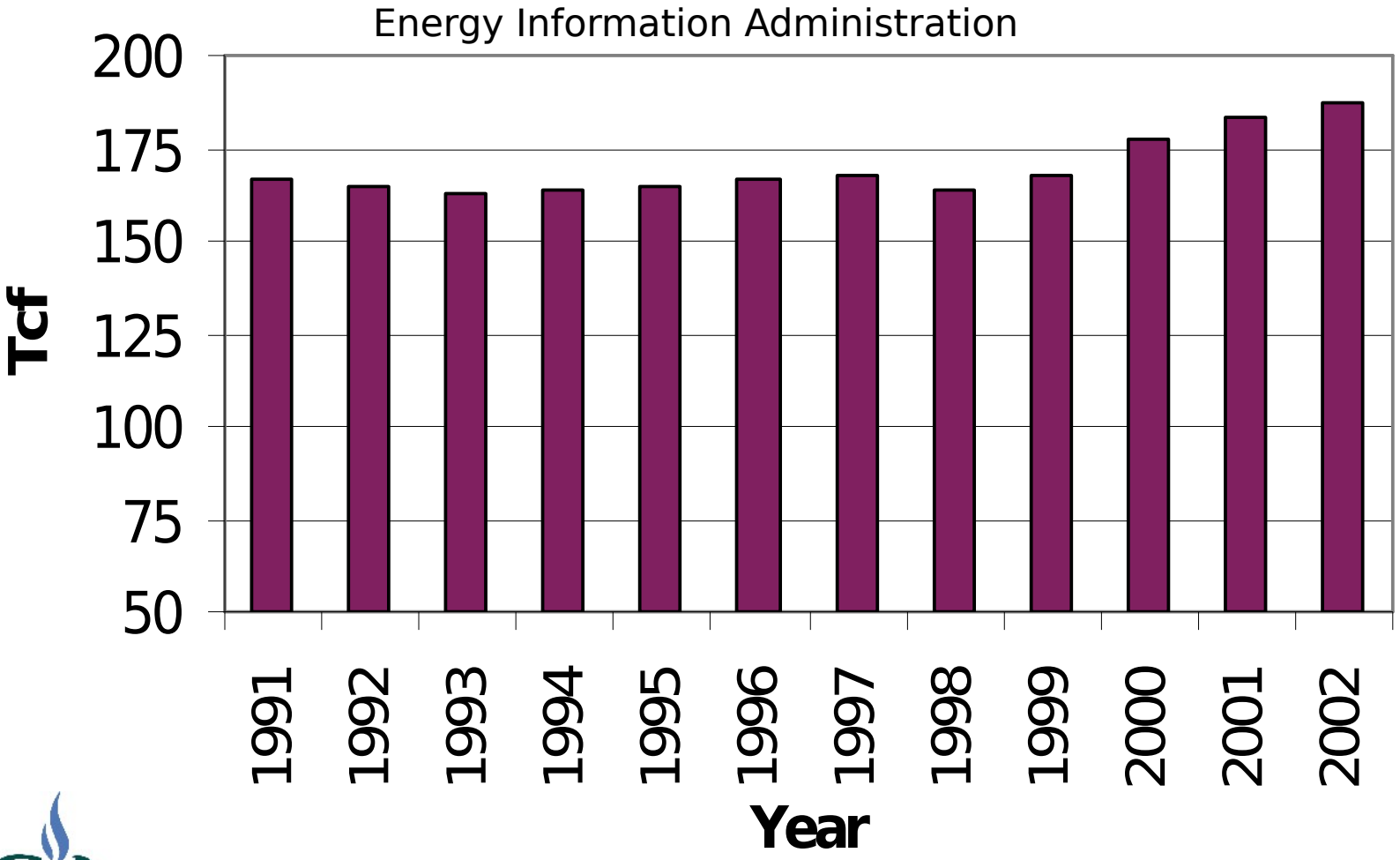
The Fundamental Question

Can Gas Supply Support a Growing Market?

Yes!

- Sufficient gas resource is available.
- Resources can be developed and delivered to the North American market at competitive prices.
- ***Requires construction of new facilities***
  - ***Pipelines, storage, and LNG infrastructure.***

Natural Gas Proved Reserves 1991 – 2002



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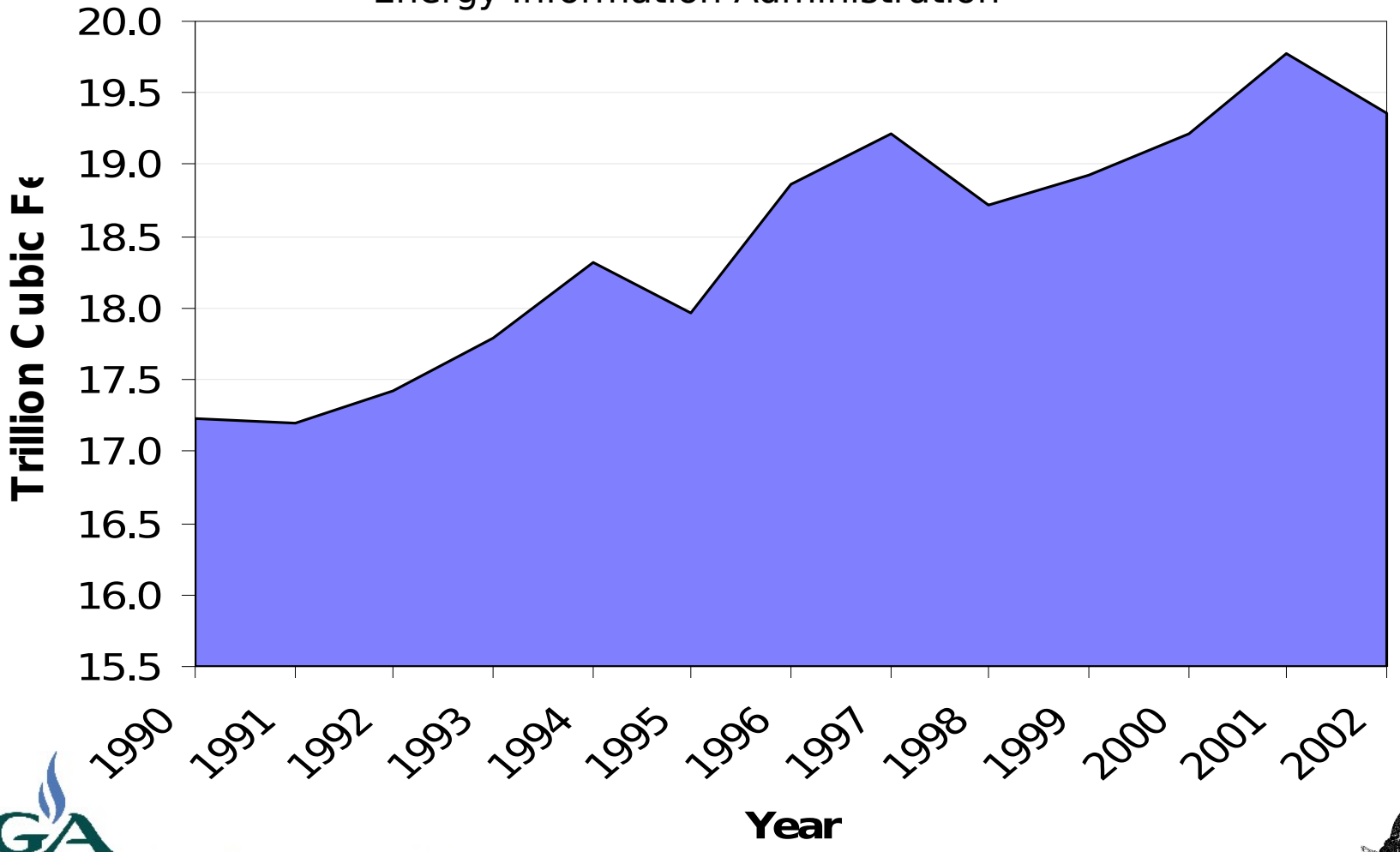
US Natural Gas Production
1990 – 2002

Energy Information Administration



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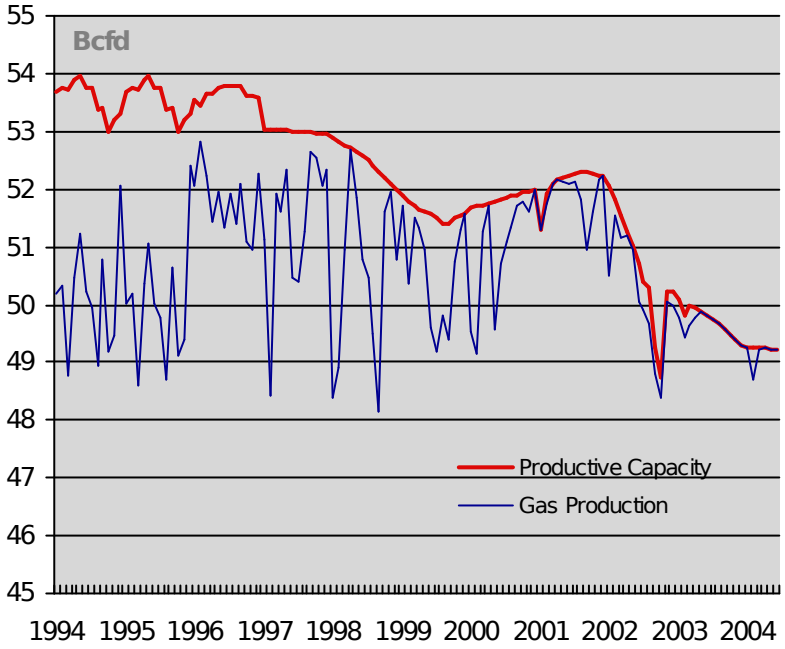
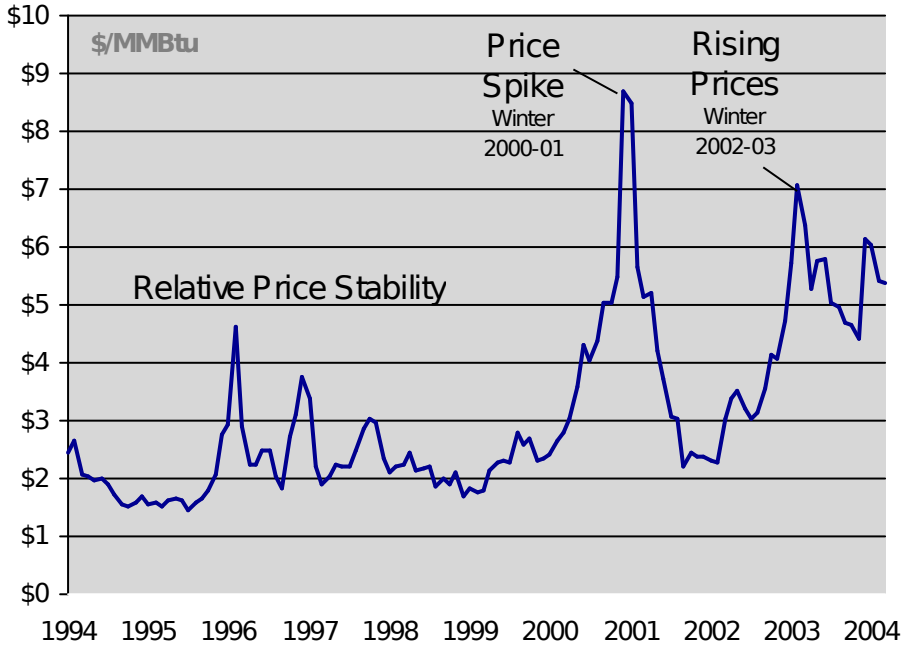
The Changing Gas Balance

Lower-48 Dry Gas Production vs. Dry Gas Productive Capacity

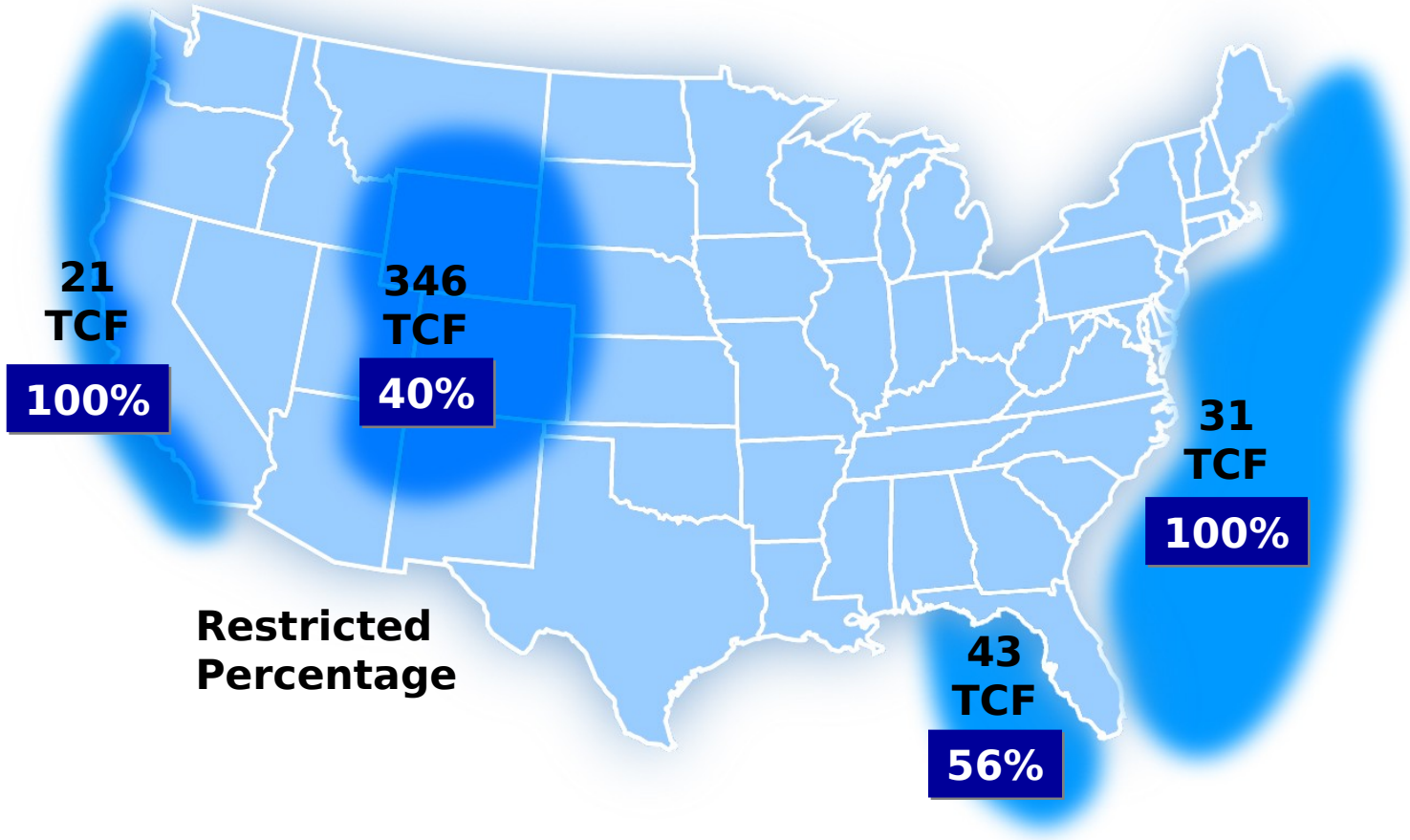


Historical Gas Prices At Henry Hub



Source: Energy and Environmental Analysis (EEA)

Major Portions of the Gas Resource Base Are Not Accessible



Approximately 29 trillion cubic feet (TCF) of the Rockies gas resources are closed to development and 108 TCF are available with restrictions.

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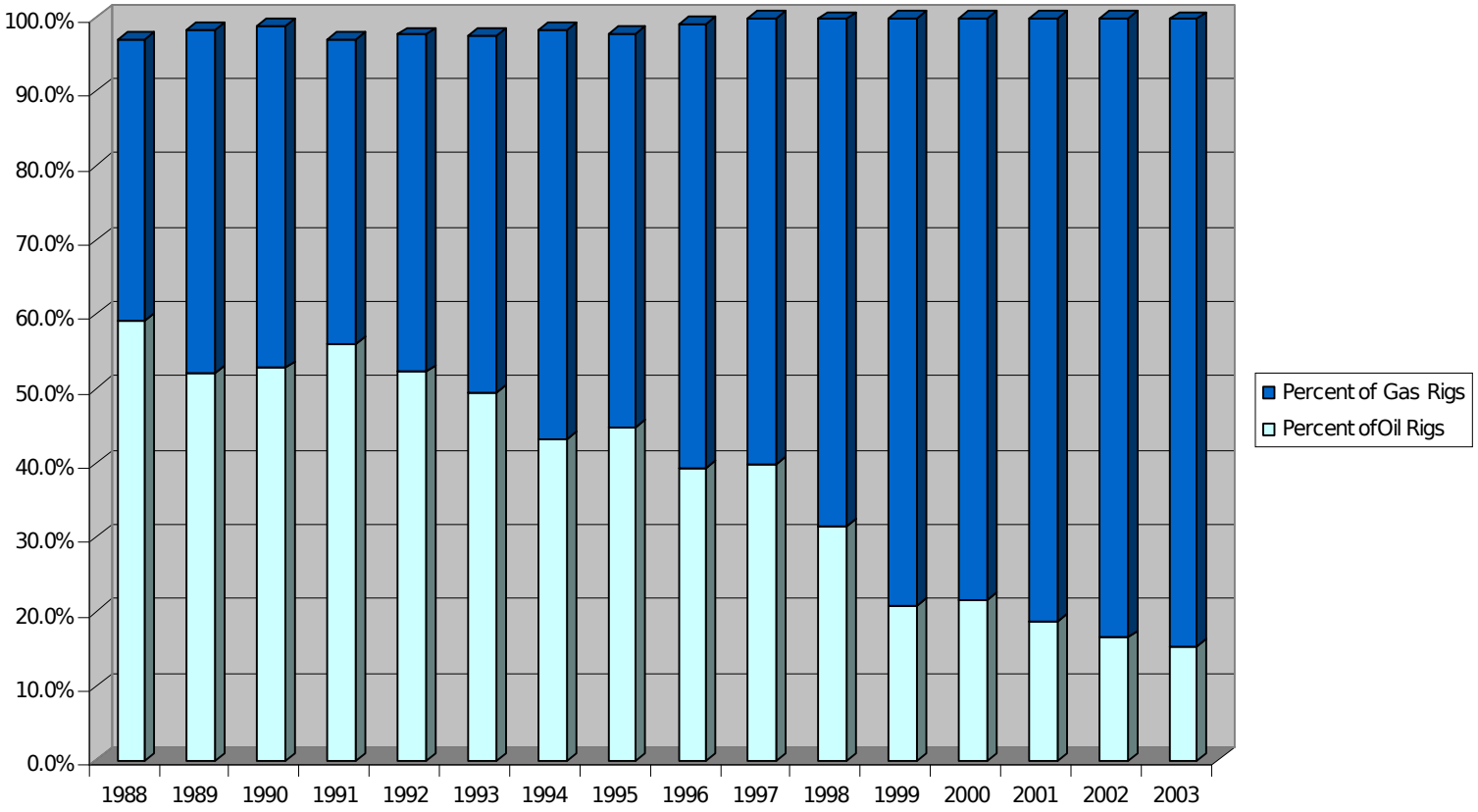
U.S. Annual Percentage of Gas vs. Oil Rigs Operating

Source: Lippman Consulting, Inc.



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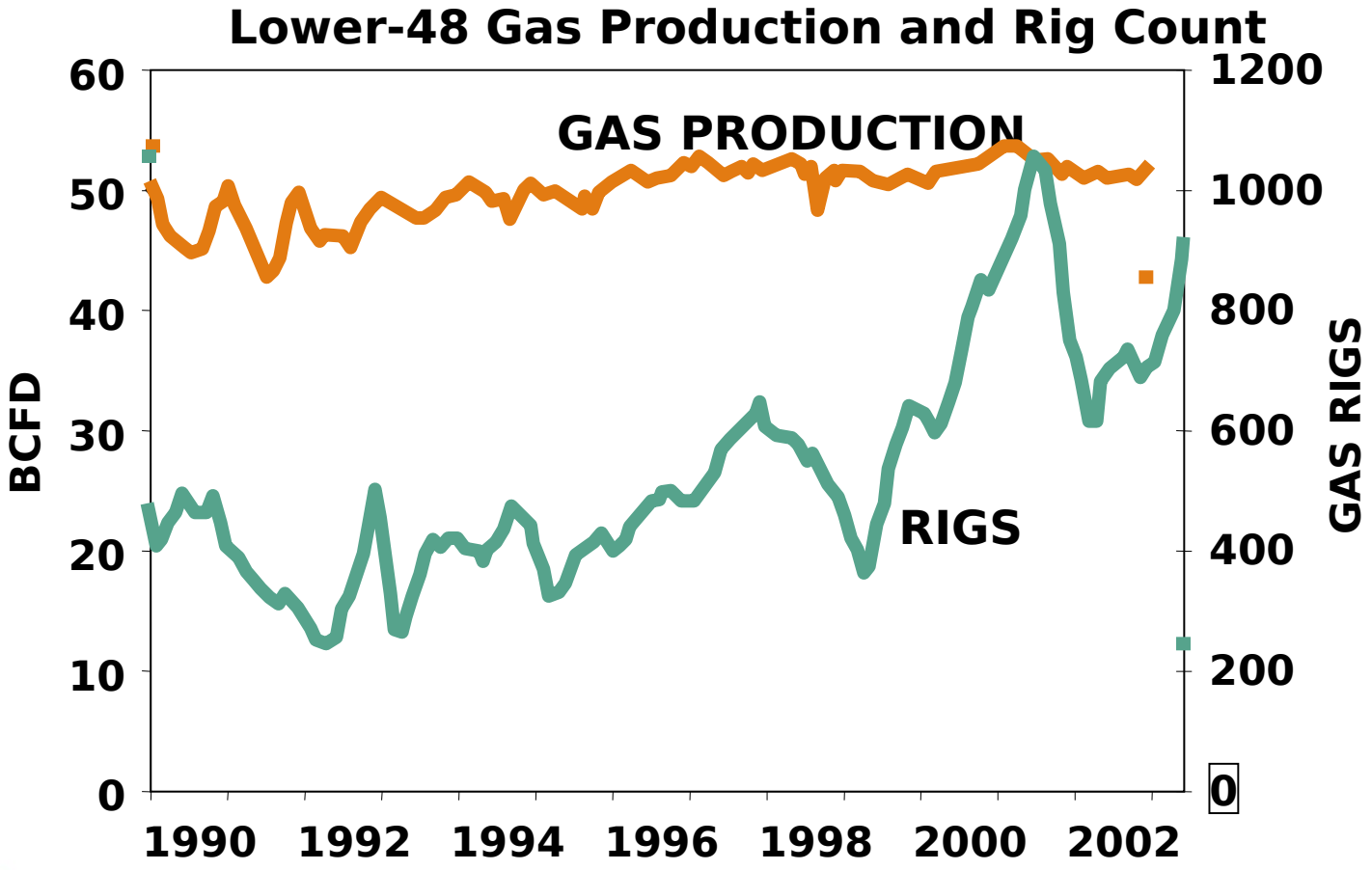
Production Response From Increased Drilling Has Been Modest

(NPC 2003)



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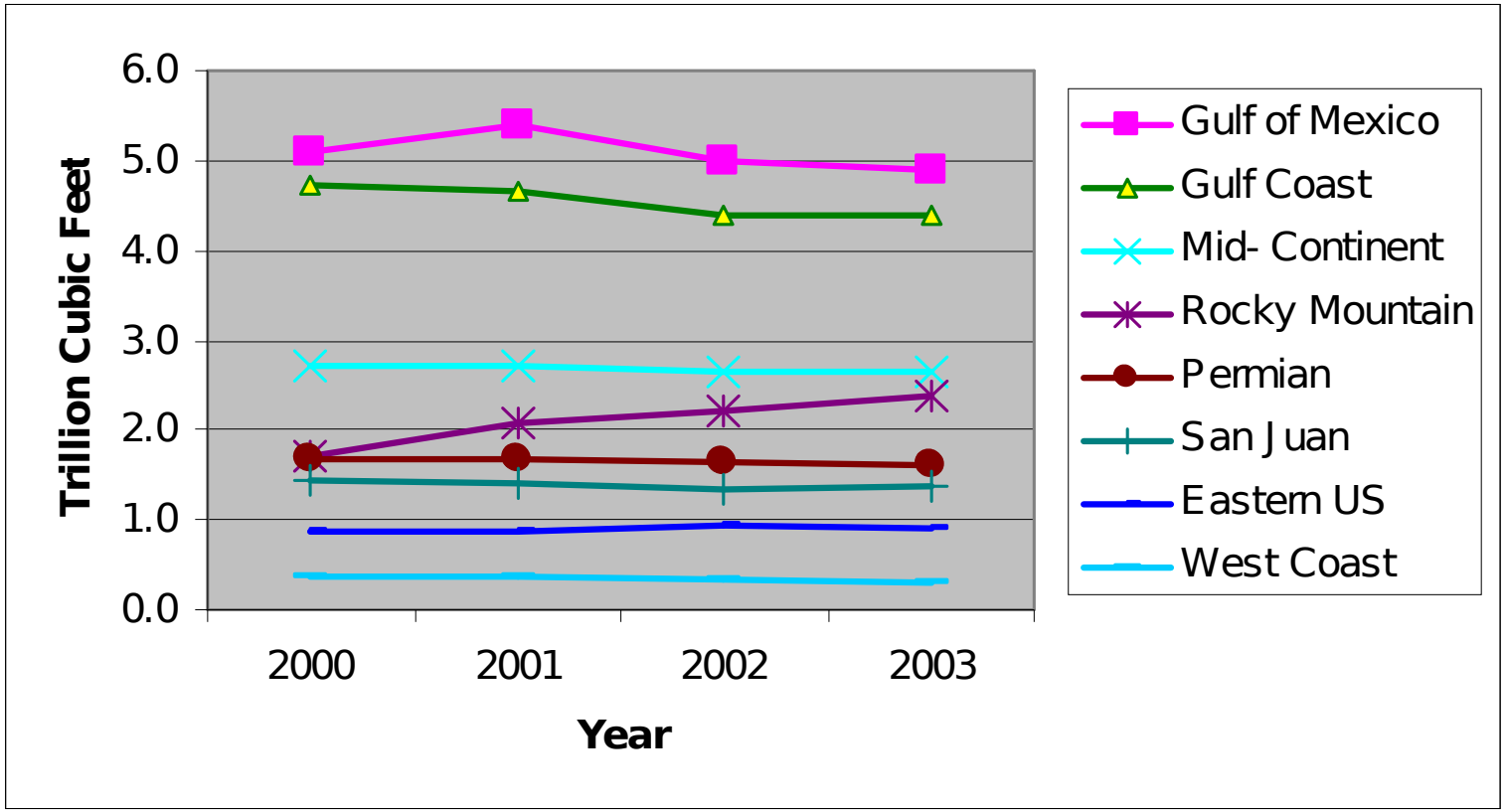
Lower-48 Annual Gas Production By Region 2000-2003



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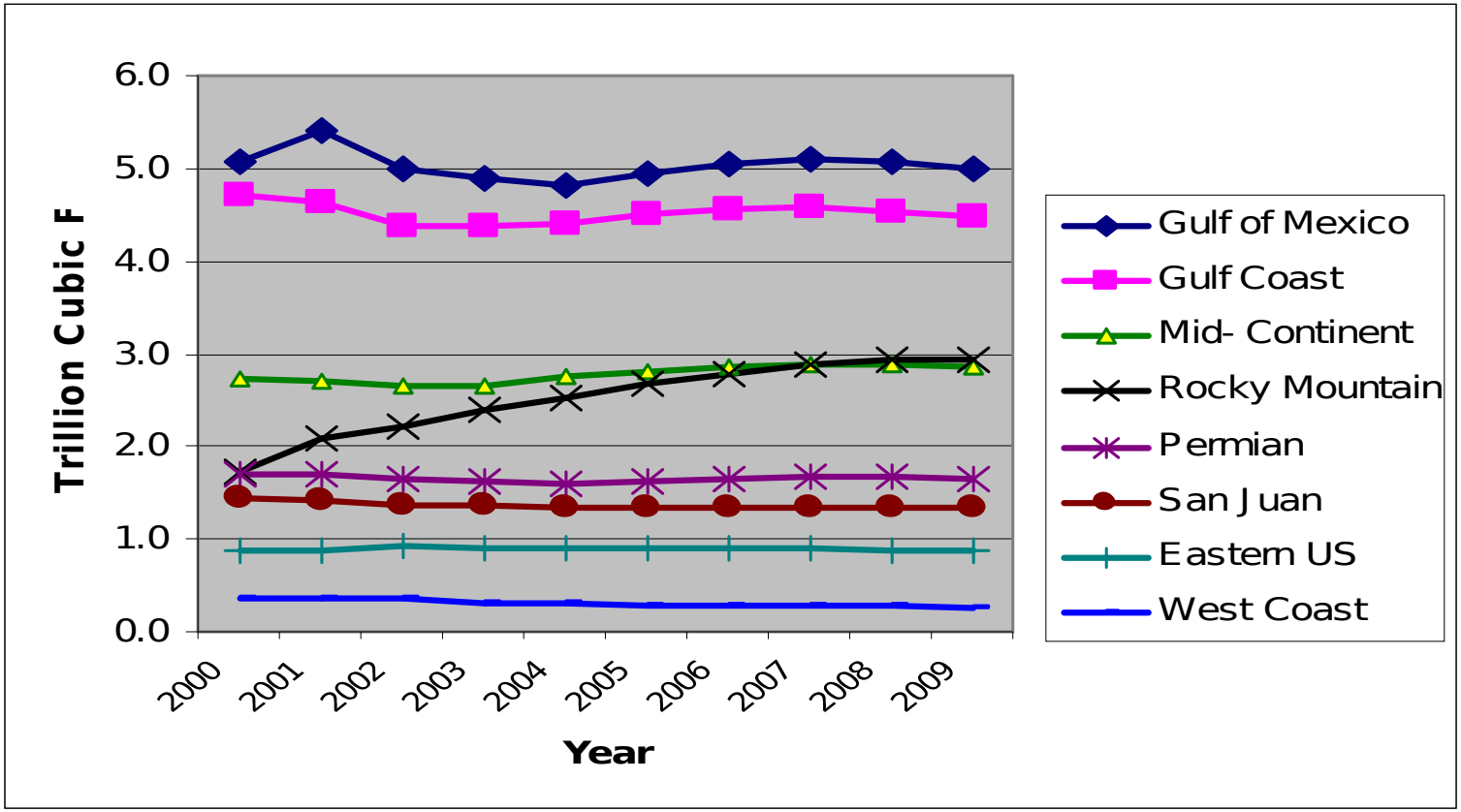
Source: Lippman Consulting, Inc., AGA

Lower-48 Annual Gas Production By Region 2000-2009



Source: Lippman Consulting, Inc., AGA

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New Supply Must Come From New Areas…

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Source: CMS Panhandle Companies

LNG Annual Capacity (Bcf)

Facility	Baseload Capacity	Peak Capacity	2003 Capacity	Send-out After Actual 2005
Everett	159	200	158	475
L. Charles	230	365	238	438
Cove Point	274	365	66	545
Elbe Island	163	245	44	292
Total	**826**	**1,175**	**507**	**1,750**

Source: Energy Information Administration (August 2002)

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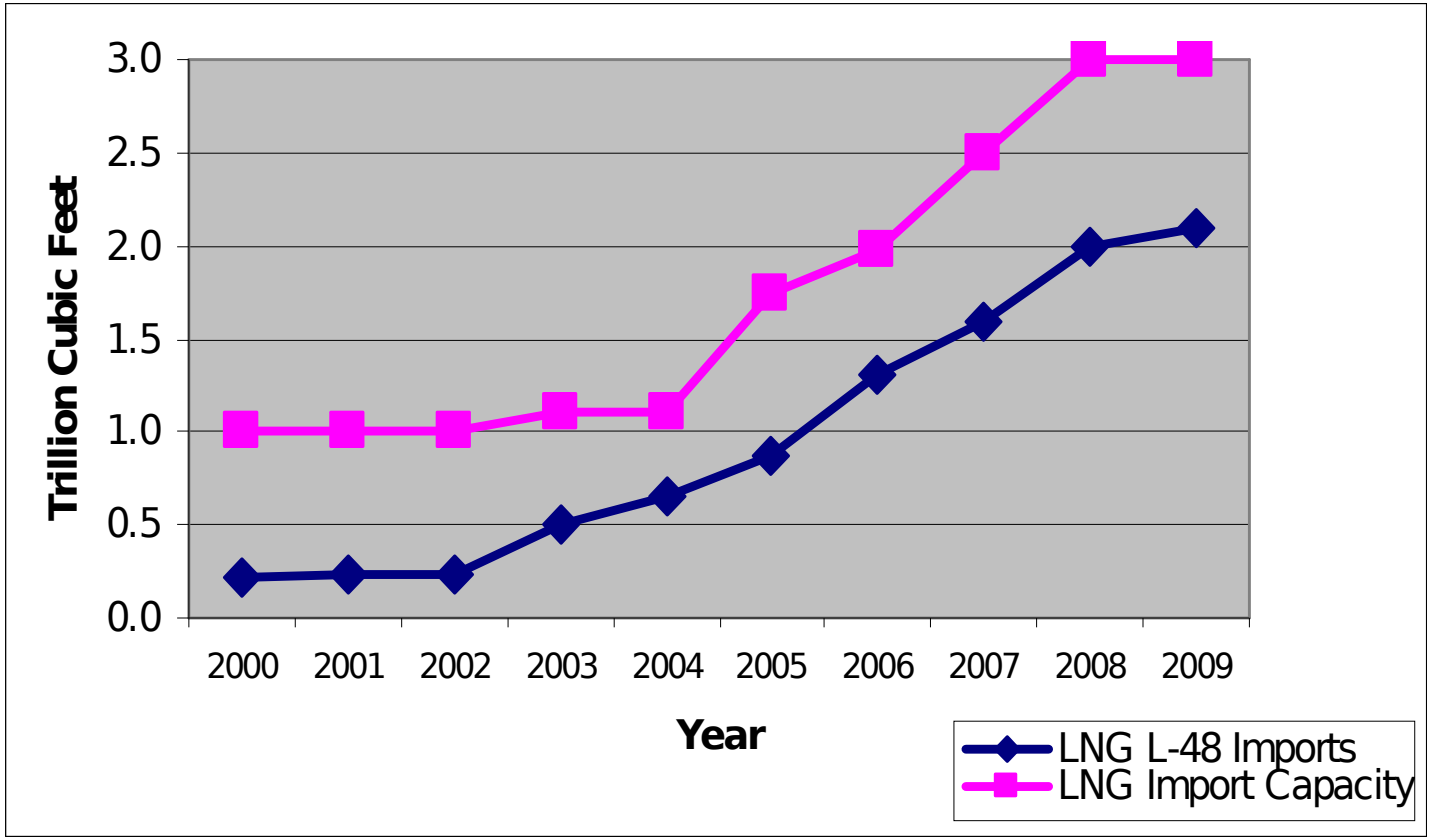
LNG Imports and Import Capacity 2000-2009



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Delivered Cost of LNG in the U.S. ($ per MMBtu)

Energy and Environmental Analysis (EEA)

	Everett	Cove Point	Elba Island	Lake Charles
Middle East Production Costs, including processing and transport to liquefaction facilities	0.65	0.65	0.65	0.65
Liquefaction	1.09	1.09	1.09	1.09
Representative LNG Shipping Rates				
Algeria	0.52	0.57	0.60	0.72
Nigeria	0.80	0.83	0.84	0.93
Norway	0.56	0.61	0.64	0.77
Venezuela	0.34	0.33	0.30	0.35
Trinidad and Tobago	0.35	0.35	0.32	0.38
Qatar	1.37	1.43	1.46	1.58
Australia	1.76	1.82	1.84	1.84
Regasification Cost	0.30	0.30	0.30	0.30
Total Cost of Middle East LNG	3.41	3.47	3.50	3.62

All imported LNG is likely to be competitive at a delivered cost of about $3.50 per MMBtu.

Sources: DOE Technical Report Nine, Assessment of Costs and Benefits of Flexible and Alternative Fuel Use in the U.S. Transportation Sector, published in January 1993, *James Jensen, LNG Shipping Solutions, U.S. Energy Information Administration, The Global Liquefied Natural Gas Market: Status and Outlook*, December 2003.

Northern Gas Market Options

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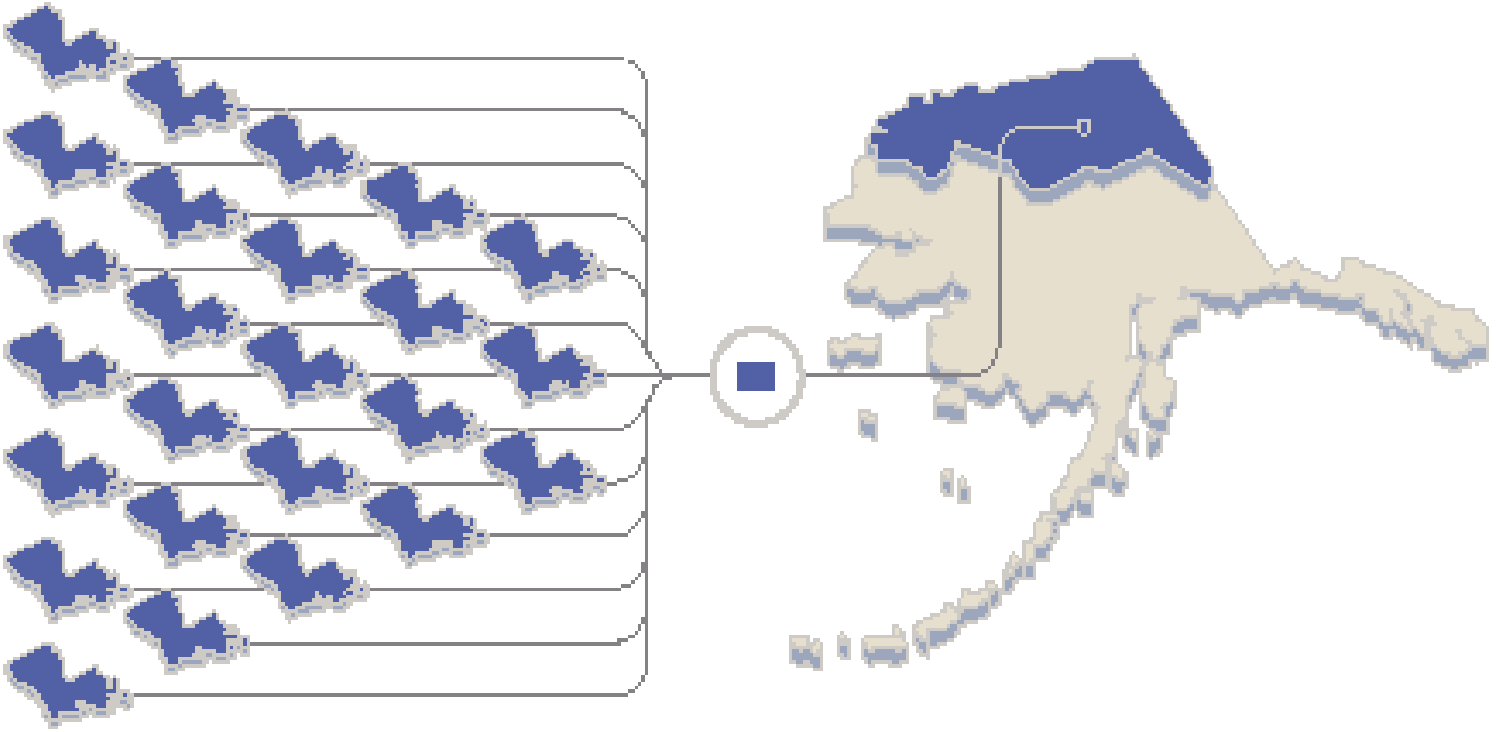
Alaska



25 years of production from onshore Louisiana is equivalent to proved gas reserves on the North Slope of Alaska alone.

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CRITICAL SUPPLY ISSUES – TRADITIONAL SOURCES

LOWER-48

- Declining Productivity
- Access – Real vs Perceived
- Moratoria
- Takeaway Capacity
- Deepwater Activity Level

CRITICAL SUPPLY ISSUES – TRADITIONAL SOURCES

CANADA

- Declining Productivity
- Mackenzie Delta – Pipeline & Heavy Oil
- CBM
- Export or Husband Resource?

CRITICAL SUPPLY ISSUES
NON – TRADITIONAL SOURCES

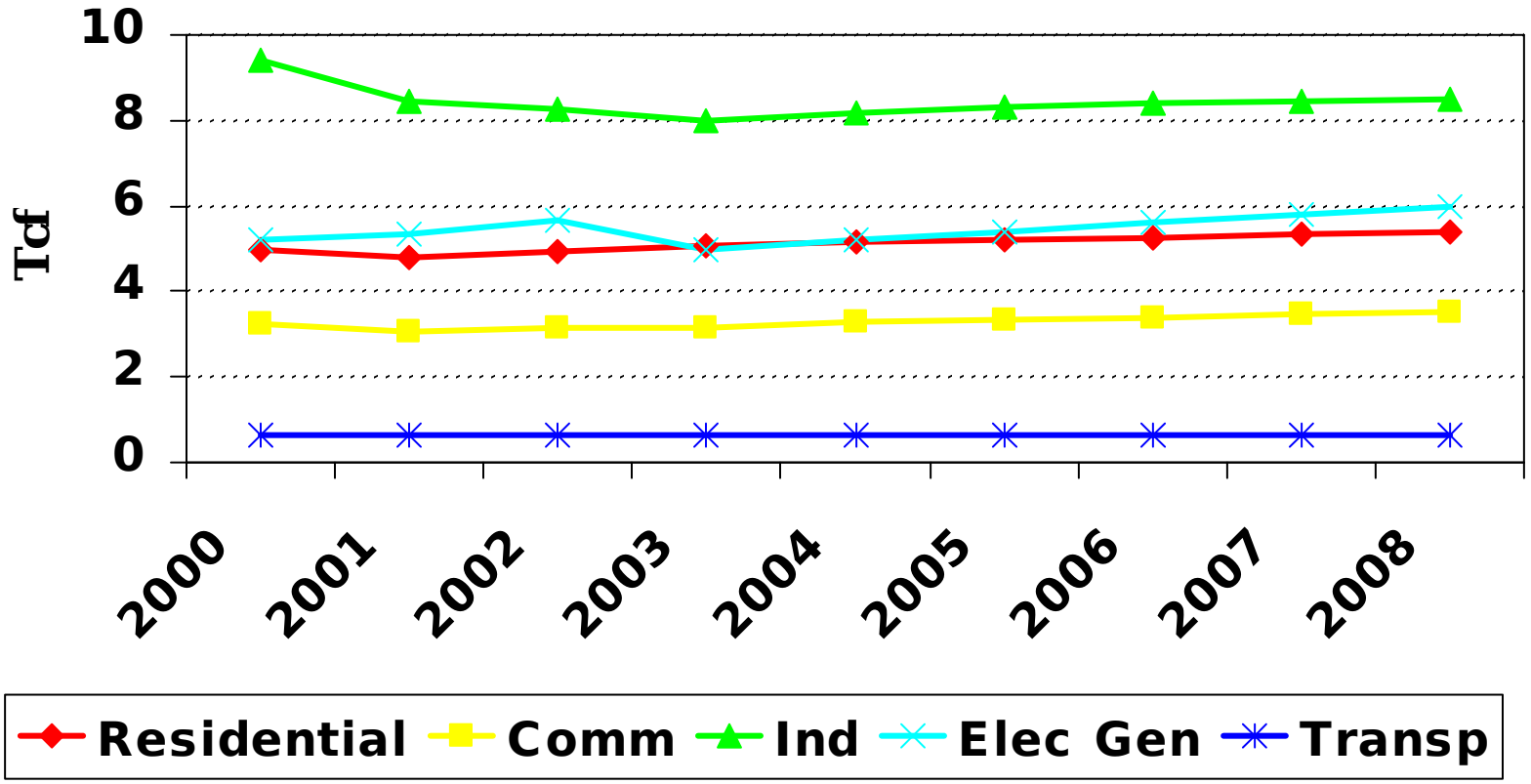
LNG

- World View vs “Imports are Bad”
- NIMBY
- Safety perception

ALASKA

- Justifiable Subsidy?
- Timing?

NATURAL GAS CONSUMPTION BY SECTOR, 2000-2008



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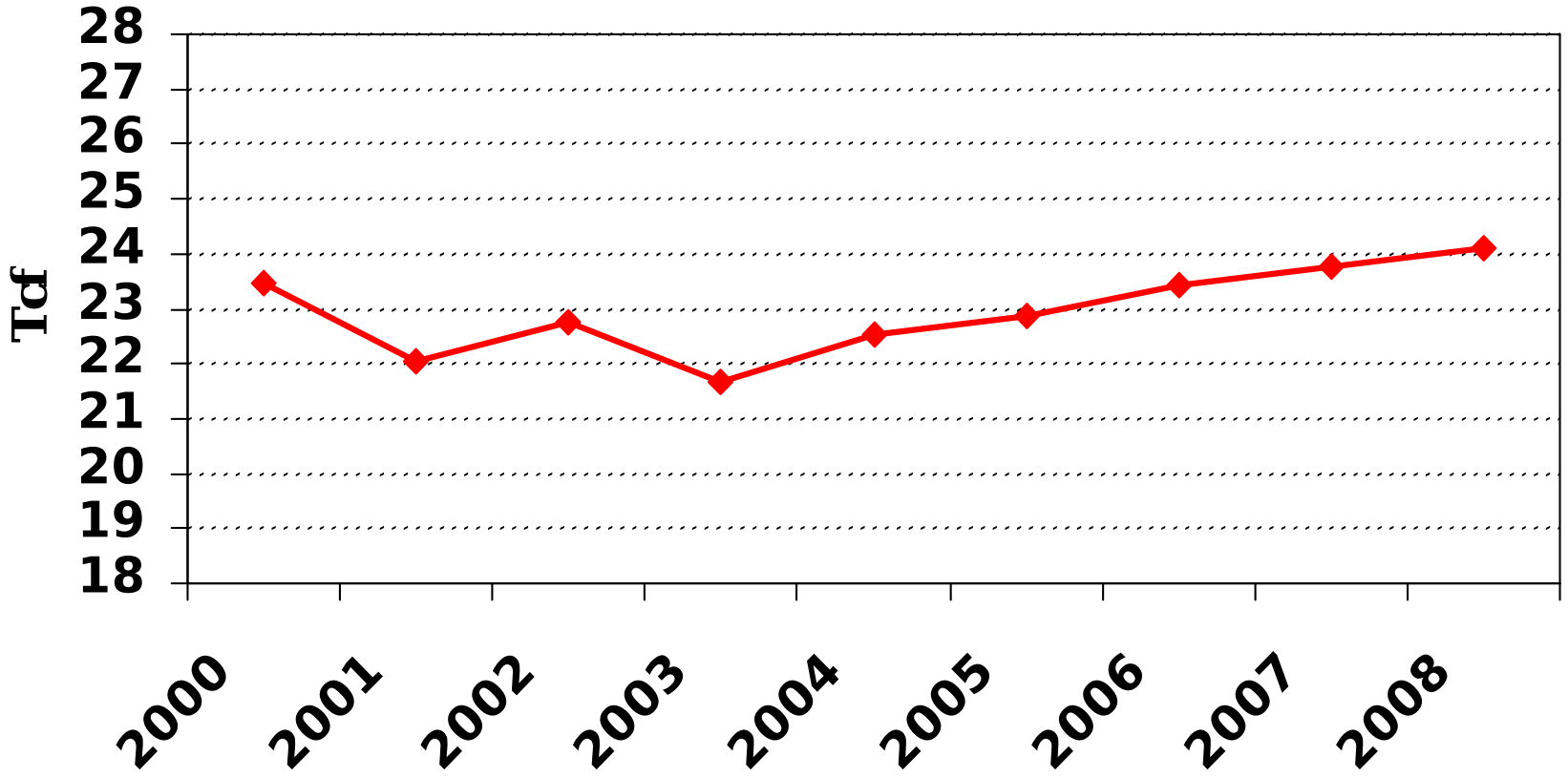
TOTAL NATURAL GAS CONSUMPTION 2000-2008



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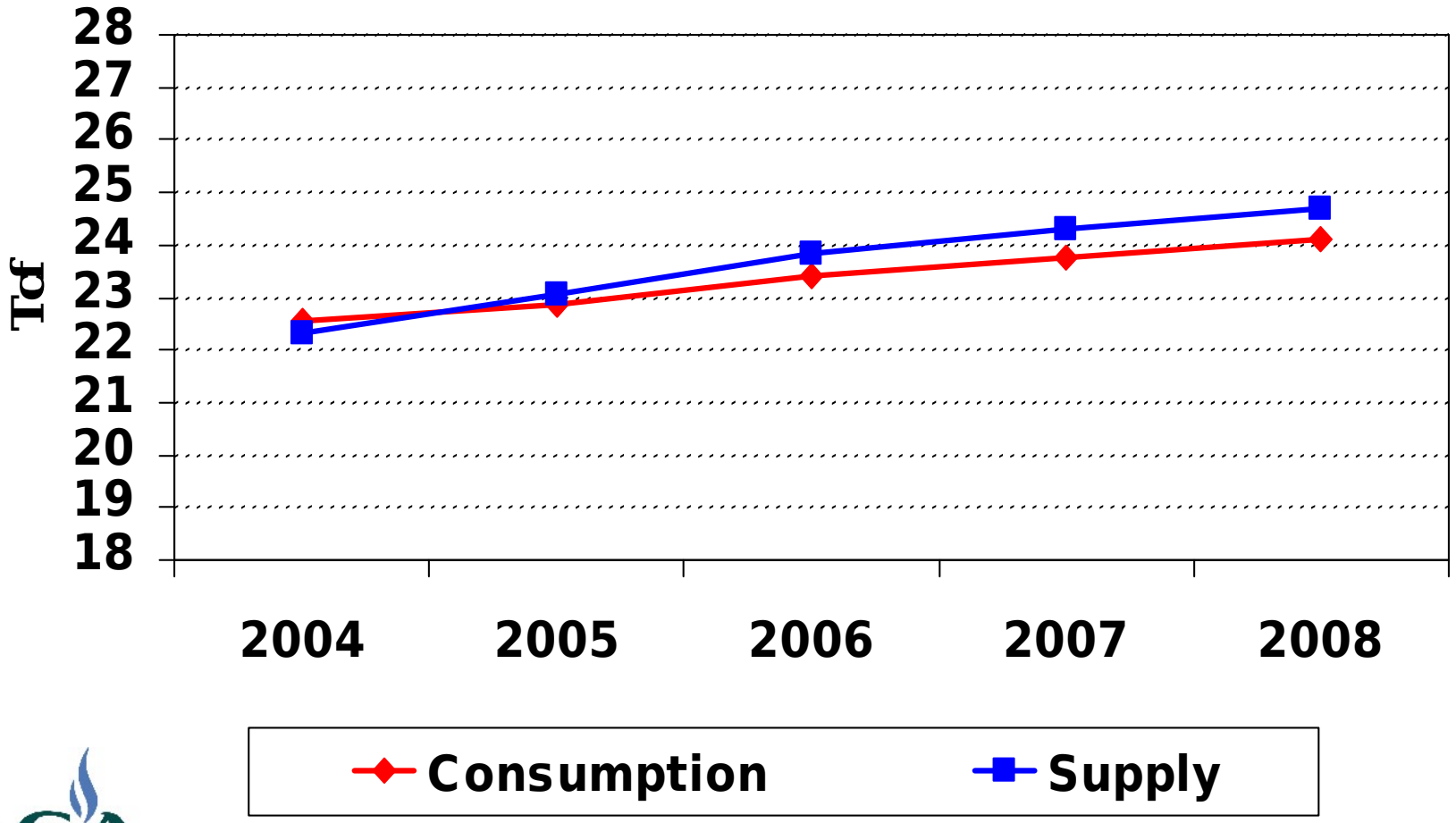
POTENTIAL GAS SUPPLY vs. CONSUMPTION, 2004-2008



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What Can We Do?
Short-Term Options

- Encourage natural gas storage
- Encourage payment programs including fixed-price contracts and budget and levelized billing
- Promote energy efficiency and conservation
- Encourage diversified gas supply portfolios, hedged and fixed-price purchases
- Encourage LIHEAP funding

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What Can We Do?
Longer Term Options

- Natural gas is plentiful in America
- Encourage balance between economic and environmental values
- Encourage Alaskan supply
- Encourage LNG supply

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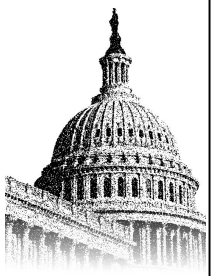

Thank You!

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